

## Exploring the Impact of the Pandemic on the Livelihood of Street Vendors



Rafia Iqbal	M.Phil Scholar (Department of Economics, PMAS-AAUR) <a href="mailto:rafiaiqbal208@gmail.com">rafiaiqbal208@gmail.com</a>
Dr. Arshad Mahmood Malik	Associate Professor / Chairman, Department of Economics, PMAS-AAUR <a href="mailto:arshadmm@uuar.edu.pk">arshadmm@uuar.edu.pk</a>
Sabtain Iqbal	Ph.D Scholar Sociology, <a href="mailto:maliksabtain@gmail.com">maliksabtain@gmail.com</a>

**Abstract:** *The pandemic has profoundly affected the livelihood of street vendors, exacerbating economic challenges as lockdowns and restrictions hinder their ability to earn a living. This study examined the impact of the COVID-19 pandemic on the livelihoods of street vendors in the Rawalpindi district, focusing on the challenges faced due to work cessation. The data from 50 street vendors in rural and urban areas of Rawalpindi was collected through a Likert scale questionnaire. Logistic regression was used to analyze the impact of different factors on the livelihoods of street vendors. The pandemic's impact on street vendors is significant due to its insights into economic inequalities, the vital role of street vendors in local economies, and the need for targeted interventions to support this vulnerable group. The findings shed light on the vulnerabilities and hardships experienced by street vendors during this unprecedented crisis. The study concludes that the pandemic has significantly affected street vendors' livelihoods, resulting in financial losses, inability to meet basic needs, food insecurity, health risks, and limited access to credit and social security benefits.*

**Keywords:** COVID-19, Street Vendors, Livelihood, Pandemic

### Introduction

The COVID-19 pandemic has resulted in significant economic damage globally, affecting various sectors, including street vendors. Street vendors are a significant part of the informal economy, and they provide essential services to society. The pandemic has impacted their livelihoods and economic dynamics, resulting in a reduction in income and access to social protection services. This essay aims to explore the impact of COVID-19 on the livelihood of street vendors and the measures taken by governments to mitigate the damage.

### Street vendor

Street vendors are a significant source of employment for millions of people in Pakistan.

They often operate in crowded and unhygienic conditions, which make them particularly susceptible to COVID-19 infection. As revealed by Romero-Michel et al. (2021) who highlighted that street vendors were the most vulnerable sector during the pandemic, primarily due to the reduction in their earnings. Thus, understanding the impact of the pandemic on the livelihoods of street vendors can help identify a vulnerable group and develop targeted policies to support them.

### Government policies

The COVID-19 pandemic has significantly impacted the livelihood of street vendors globally. Street vendors are an essential part of the informal economy, and the pandemic has resulted in a reduction in income and access to

social protection services. Governments need to implement policies and measures to mitigate the impact of the pandemic on street vendors and other vulnerable sectors of society. It is essential to provide social protection services to vulnerable households to reduce food insecurity and support their livelihoods. The COVID-19 pandemic has highlighted the importance of supporting vulnerable sectors of society and implementing policies to reduce economic shocks and mitigate their impact.

The objective of this study was to examine the impact of the pandemic on street vendors' livelihoods, explore the challenges they faced, and investigate the government's role in supporting them during the post-pandemic period.

### **Literature review**

In many countries, street vendors are associated with the informal economy. According to Romero-Michel et al. (2021), the characteristics of street vendors provide them with an external placement against the regulations regarding the usage or occupation of public areas and roadways as workplaces. This situation has resulted in reduced involvement in demanding tax records, regulatory controls, or social protection services. As a result, street vendors are particularly vulnerable to the economic shocks caused by the COVID-19 pandemic.

The decrease in demand for street vendors' products due to the pandemic-related restrictions is also noted by Riaz et al. (2020) in their study on the impact of COVID-19 on street vendors in Pakistan. The study highlights that vendors in urban areas have been hit the hardest due to the decrease in foot traffic and a lack of access to online markets.

According to a report by the International Labour Organization (ILO) and the Food and Agriculture Organization (FAO), the COVID-19 pandemic has had a significant impact on the livelihoods of street vendors in Pakistan (Banu et al. 2023). The report highlights that street vendors, who operate primarily in informal markets, have been particularly affected by the pandemic-related restrictions on mobility and economic activity.

Existing research has recognized the far-reaching consequences of the COVID-19 pandemic, particularly on vulnerable segments of society. Studies by Romero-Michel et al. (2021) have shed light on the macroeconomic interventions employed by governments to address the detrimental effects of the pandemic, including job losses, income shocks, and diminished livelihoods. These adverse outcomes have been especially pronounced for individuals relying on informal employment, such as street vendors, who often encounter limited access to social protection services.

Debnath and Paul (2020) aimed to explore the impact of the COVID-19 pandemic on street vendors in India, particularly their income, livelihood, and well-being. They collected data from 250 street vendors across five states in India using a structured questionnaire and conducted descriptive and regression analyses. The study found that the pandemic had a significant negative impact on the income and livelihood of street vendors.

Abubakar, Hamma-Adama, and Zakari (2020) investigated the impact of the pandemic on street vendors in Nigeria. They collected data from 120 street vendors using a structured questionnaire and conducted descriptive and inferential statistical analyses. The study found that the pandemic had a negative impact on the income, sales, and profit of street vendors in Nigeria. Choudhury and Dutta (2021) studied the impact of the pandemic on street vendors in India, particularly in Kolkata. They collected data from 202 street vendors using a structured questionnaire and conducted descriptive and inferential statistical analyses. The study found that the pandemic had a significant negative impact on the income, livelihood, and well-being of street vendors, particularly women vendors.

Bhattacharjee and Pal (2020) aimed to examine the impact of the pandemic on street vendors in India, particularly in Kolkata. They collected data from 300 street vendors using a structured questionnaire and conducted descriptive and regression analyses. The study found that the pandemic had a significant negative impact on the income, livelihood, and health of street

vendors.

Misra and Sharma (2020) studied the impact of the pandemic on street vendors in Delhi NCR. They collected data from 200 street vendors using a structured questionnaire and conducted descriptive and inferential statistical analyses. The study found that the pandemic had a significant negative impact on the income, livelihood, and well-being of street vendors, particularly migrant vendors.

Bhowmik and Sarkar (2020) conducted a case study of the impact of the pandemic on street vendors in Kolkata. They collected data from 50 street vendors using a structured questionnaire and conducted descriptive and inferential statistical analyses. The study found that the pandemic had a significant negative impact on the income, livelihood, and well-being of street vendors.

Zaidi and Siddiqui (2020) aimed to identify the challenges and opportunities for sustainable livelihoods of street vendors in India during the pandemic. They conducted a literature review and qualitative analysis of government policies and programs. The study found that the pandemic had a significant negative impact on the income, livelihood, and well-being of street vendors, but also highlighted the potential for policy interventions to support their livelihoods.

Mishra and Mishra (2020) conducted a case study of the impact of the pandemic on street vendors in Bhubaneswar city. They collected data from 100 street vendors using a structured questionnaire and conducted descriptive and inferential statistical analyses. The study found that the pandemic had a significant negative impact on the income, livelihood, and well-being of street vendors, particularly those selling perishable goods.

Singh and Rana (2020) aimed to explore the impact of the pandemic on street vendors in India, particularly in the state of Uttar Pradesh. They collected data from 200 street vendors using a structured questionnaire and conducted descriptive and inferential statistical analyses. The study found that the pandemic had a significant negative impact on the income, livelihood, and well-being of street vendors,

particularly migrant vendors.

The impact of the COVID-19 pandemic on street vendors in different parts of India and Nepal has been studied by various researchers. This literature review examines six studies, including Sahu (2020), Sharma and Kumari (2020), Shrestha and Thapa (2020), Yasin and Abbas (2020), Chaudhuri (2020), and Mohanty and Panda (2020), and one article by Mohapatra (2020). The objective of these studies is to assess the impact of the COVID-19 pandemic on street vendors and their coping strategies in India and Nepal.

Sahu (2020) conducted an empirical study to explore the impact of the COVID-19 pandemic on street vendors in Bhubaneswar, India. The study collected data from 200 street vendors through a structured questionnaire and analyzed the data using descriptive statistics. The study found that street vendors experienced a significant decline in their income and faced various challenges such as reduced footfall, disrupted supply chains, and increased competition. The study also revealed that street vendors adopted various coping strategies, including offering home delivery services, reducing prices, and diversifying their products.

### **Methodology**

To achieve the objective of the research, a 'field survey approach' was adopted, which involved the use of both quantitative and qualitative methods for data collection and analysis directly from the stakeholders. This approach provides a comprehensive understanding of the complex dynamics at play in the street vending sector (Van Meerkerk, et al. 2020). The quantitative phase of the study involved the collection of numerical data to assess the magnitude of the impact of the pandemic on street vendors. A structured questionnaire was designed and administered to a large sample of street vendors operating in various locations. The questionnaire included questions related to their income levels, changes in customer demand, access to financial resources, and government support. Additionally, relevant demographic information such as age, gender, and educational background was collected to identify any

potential variations in the experiences of different groups of street vendors. The collected data was then analyzed using statistical methods, including descriptive statistics, correlation and regression analysis, to identify trends, patterns, and relationships between variables.

The study utilized purposive sampling to select participants for the research. Given the specific nature of the research topic and the need to target individuals directly affected by the pandemic, street vendors operating in various locations were purposively selected as the primary sample. In order to achieve the data, 50 male street vendors were selected from both rural and urban areas of the district. To analyze the impact of COVID-19 on street vendors' livelihoods, this study employs a comprehensive research methodology. Initially, 'descriptive statistics are utilized to provide a comprehensive overview of the socio-demographic characteristics' of the street vendors, their income levels, and changes in their economic situation before and during the pandemic (Person, 2011). This quantitative analysis offers a snapshot of the vendors' pre-existing conditions and allows for a better understanding of the challenges they face in the current context.

Furthermore, a correlation matrix is constructed to explore the relationships between different variables related to street vendors' livelihoods. This matrix helps identify potential associations and dependencies among variables, such as income levels, access to financial resources, social support networks, and the ability to adapt to changing market conditions. By examining these interconnections, we can discern the complex web of factors influencing the street vendors' economic resilience. The Mann-Whitney U test was employed to examine the differences in certain variables between two groups of street vendors in the Rawalpindi district. The Mann-Whitney U test is a non-parametric statistical test used when the data do not meet the assumptions of normality and/or when the variables are measured on an ordinal or continuous scale.

#### **Econometric Model:**

The Econometric Model was employed along

the ordinary logistic regression analysis to examine the determinants of street vendors' economic resilience during the COVID-19 crisis. This statistical technique enables us to explore the impact of various independent variables, such as age, gender, education, access to credit, and government support programs, on the likelihood of maintaining or improving livelihoods in the face of the pandemic. The regression analysis provides valuable insights into the relative importance of different factors and their contribution to the street vendors' economic well-being (Kumari, 2018; Amelia et al. 2022).

The independent variables included in the analysis are:

**Residence (Urban vs. Rural):** This variable represents the type of residence of the street vendors. The coefficient of 0.75 suggests that residing in an urban area is associated with a higher odds ratio of 2.12 for experiencing a specific level of the dependent variable compared to residing in a rural area. The 95% confidence interval (CI) lower bound of 1.65 and the upper bound of 2.73 indicate that the odds of experiencing the specific level are significantly higher for street vendors in urban areas.

**Years of Working:** This variable represents the number of years the street vendors have been working. The coefficient of -0.34 indicates that an increase in years of working is associated with a decrease in the odds ratio of 0.71 for experiencing a specific level of the dependent variable. The 95% CI lower bound of 0.58 and the upper bound of 0.87 suggest that as the number of years of working increases, the odds of experiencing the specific level decrease significantly.

**Government Support Variables:** This variable represents the presence or absence of government support programs or initiatives for street vendors. The coefficient of 0.21 indicates that the presence of government support is associated with a higher odds ratio of 1.24 for experiencing a specific level of the dependent variable. The 95% CI lower bound of 1.04 and the upper bound of 1.49 suggest that the odds of experiencing the specific level are significantly

higher when government support is available.

The econometric equation for an ordinal logistic regression model can be represented as follows:

$$\ln(\text{odds of } Y \leq j) = \alpha_j + \beta_1 X_1 + \beta_2 X_2 + \dots + \beta_n X_n$$

Where:

- $\ln$  denotes the natural logarithm.
- $Y$  represents the ordinal dependent variable.
- $j$  represents the outcome category being considered.
- $\alpha_j$  represents the intercept for the  $j$ -th outcome category.
- $X_1, X_2, \dots, X_n$  are the independent variables.
- $\beta_1, \beta_2, \dots, \beta_n$  are the corresponding coefficients for the independent variables.

The equation implies that the logarithm of the odds of  $Y$  being in category  $j$  or lower is a linear function of the independent variables. The coefficients ( $\beta_1, \beta_2, \dots, \beta_n$ ) indicate the effect of each independent variable on the log-odds ratio, while the intercepts ( $\alpha_j$ ) capture the baseline log-odds for each outcome category.

to each category, while considering the ordered nature of the dependent variable. It is important to note that the actual implementation of the ordinal logistic regression model may differ slightly depending on the statistical software or programming language being used.

By estimating the coefficients using maximum likelihood estimation or related methods, one can make inferences about the impact of the independent variables on the odds of belonging

Ordinal logistic regression was applied to understand the impact of the pandemic on street vendor livelihood. The analysis explored the relationship between the following variables:

Variable	Description
Livelihood affected as a street vendor	The extent to which a street vendor's livelihood has been impacted by the pandemic (ordinal variable).
Residence	The type of residence (rural or urban) where street vendors operate.
Experience (Years working as a street vendor)	The number of years a street vendor has been engaged in this occupation.
Access to government support or relief measures	The availability of government support or relief measures for street vendors.

### Ordinal Logistic Regression Model of the Study

$$P(\text{livelihood impact} \leq j) = F(\alpha_j + \beta_1 * \text{residence} + \beta_2 * \text{years\_working} + \beta_3 * \text{government support})$$

Where:

- $P(\text{livelihood impact} \leq j)$  is the cumulative probability of livelihood impact being less than or equal to category  $j$ .
- $F$  is the cumulative distribution function of the logistic distribution.
- $\alpha_j$  represents the intercept for category  $j$ .
- $\beta_1, \beta_2, \beta_3$  are the coefficients associated with the independent variables residence, years

working, and government support, respectively.

The coefficients ( $\beta_1, \beta_2, \beta_3$ ) were estimated using maximum likelihood estimation technique. The intercepts ( $\alpha_j$ ) represent the baseline likelihoods for each category. It's important to consider the assumptions and limitations of the ordinal logistic regression model when interpreting the results. Additionally, this equation assumes a proportional odds assumption, which implies that the effect of independent variables on the outcome remains constant across different thresholds of the dependent variable.

### Results and Discussion

The COVID-19 pandemic has profound socio-

economic consequences globally, with street vendors being particularly vulnerable due to the nature of their work and limited access to formal support systems (Béné et al. 2021). Rawalpindi district, situated in Pakistan, has a significant population of street vendors who rely on daily earnings to sustain their livelihoods. The pandemic's disruptive effects on economic activities, mobility restrictions, and changing consumer behavior have undoubtedly affected these individuals, potentially pushing them

further into poverty. The consistency in the duration of working years among street vendors aligns with the notion that many individuals enter street vending as a means of livelihood due to limited job opportunities or economic constraints. Additionally, the similarity in income levels and the variability observed could be indicative of income disparities within the street vendor population, which was also commonly reported in previous studies.

Table 1: Descriptive Statistics of socioeconomic characteristics of street vendors

Socio-Economic	Average	Median	Standard Deviation
Age	5	5	2.53
Education	6.25	7	1.79
Marital Status	6.25	6	3.19
Years working	5	5	1.55
Income	6.25	6.5	3.13

The descriptive statistics presented in Table 1 provide valuable insights into the socio-economic characteristics of street vendors in the Rawalpindi district. The interpretations and consistency with previous research support the notion that street vending is a complex and diverse sector, influenced by various factors such as age, education, marital status, and income levels. These findings contribute to the existing literature on street vendors and inform our understanding of their livelihoods in the context of the COVID-19 pandemic.

**Government Support and Street Vendors during COVID 19**

The effect of government support on socioeconomic conditions of street vendors was analyzed by applying Mann-Whitney U test. By conducting the Mann-Whitney U test, we aim to contribute to the understanding of the

effectiveness of government support programs in mitigating the adverse effects of the COVID-19 pandemic on street vendors' economic resilience. Previous studies have provided 'valuable insights for policymakers, local authorities, and non-governmental organizations involved in designing and implementing support measures for vulnerable street vendor communities (Meher, et al, 2021; Zaidi, & Siddiqui, 2020).

The variables selected for the Mann-Whitney U test included income levels, access to financial resources, and changes in business operations. These statistics are used to determine if there is a significant difference between the two groups in terms of the variables under investigation as it provide insights into the economic well-being, financial stability, and adaptability of street vendors during the pandemic.

Table 2: Comparing effect of Government support to street vendors during COVID-19 (Mann-Whitney U test result)

Test	U statistic	Z value	Conclusion
U	96	1.47	No significant difference

The two groups being compared in this analysis are street vendors who have received government support during the COVID-19

pandemic and those who have not received any government support. The objective was to determine if there are significant differences in

selected variables between these two groups, which could shed light on the potential impact of government support programs on street vendors' livelihoods. The results of the Mann-Whitney U test indicate that the U statistic is 96 and the corresponding Z value is 1.47. Based on the Z value, we compare it to the critical values for the desired level of significance (e.g., 0.05). If the absolute value of the Z value is less than the critical value, it indicates that there is no significant difference between the two groups. In this case, the Z value of 1.47 does not exceed the critical value, suggesting that there is no significant difference between the street vendors who have received government support and those who have not received any government support. Therefore, we fail to reject the null hypothesis, which states that there is no difference between the two groups for the selected variables. The results of the Mann-Whitney U test, indicating no significant difference between the two groups, should be interpreted in the context of previous studies and the specific circumstances of the Rawalpindi district. It is possible that the government support programs implemented during the COVID-19 pandemic have not had a discernible impact on the variables examined in this analysis.

While the findings may differ from some previous studies that have reported positive effects of government support on street vendors' livelihoods, it is important to consider the contextual factors and variations in the design and implementation of support programs across different regions and time periods. The specific characteristics of the Rawalpindi district, including its unique socio-economic conditions and the nature of government interventions, may contribute to the observed lack of significant difference in this study.

The consistency of the results with previous studies also depends on the specific variables and measures used in the analysis. It is possible that the variables selected for the Mann-Whitney U test in this study may not fully capture the effects of government support programs on street vendors' livelihoods. Future research could explore additional variables or employ

alternative statistical methods to further investigate the impact of government support on street vendor communities.

Overall, while the current analysis suggests no significant difference between the two groups of street vendors regarding income levels, access to financial resources, and changes in business operations, it is essential to consider the limitations and context-specific factors that may have influenced these findings. Further research understanding of the local context are necessary to fully comprehend the impact of government support on street vendors' livelihoods in the Rawalpindi district.

### **Impact of COVID 19 of street vender livelihood**

Factor analysis was conducted to identify underlying factors or latent constructs that explain the relationships among a set of observed variables related to the impact of COVID-19 on street vendors' livelihoods in the Rawalpindi district. Factor analysis uncover the underlying structure or dimensions within a larger set of variables and helps to reduce the complexity of the data and identify common patterns or factors that account for the observed correlations among the variables. It will facilitate in deeper understanding of the underlying constructs influencing street vendors' livelihood outcomes and provide a comprehensive framework for understanding the interrelationships among different variables and offer insights into the factors that contribute to or hinder street vendors' economic resilience during the pandemic (Banu et al. 2023).

The consistency of the results with previous studies will depend on the specific variables included in the factor analysis and the characteristics of the study population. However, if the factor analysis reveals similar underlying constructs as previous research, it would indicate consistency in the factors influencing street vendors' livelihood outcomes across different contexts and populations.

Table 3 provides the eigenvalues obtained from the factor analysis in relation with the proportion of variance explained by each factor and the cumulative proportion of variance explained.

These results are crucial for interpreting and justifying the findings of the factor analysis. Eigenvalues represent the amount of variance accounted for by each factor. Larger eigenvalues indicate that the corresponding factor explains a greater amount of variance in the observed variables. In Table 3, we observe that the first factor ( $\lambda_1$ ) has the highest eigenvalue of 5.883,

followed by the second factor ( $\lambda_2$ ) with an eigenvalue of 0.564. The eigenvalues for the subsequent factors decrease successively, with lower values for  $\lambda_3, \lambda_4, \lambda_5, \lambda_6, \lambda_7,$  and  $\lambda_8$ .

Table 3: Socioeconomic factors affecting street vender during Covid-19 (Factor Analysis)

Factor		Eigenvalue	Proportion of Variance Explained (%)	Cumulative Proportion of Variance Explained
Loss of Income	$\lambda_1$	5.883	0.844	0.844
Inability to Afford Basic Necessities	$\lambda_2$	0.564	0.081	0.925
Accumulation of Debts	$\lambda_3$	0.278	0.040	0.965
Food Insecurity	$\lambda_4$	0.115	0.017	0.982
Health and Safety Concerns	$\lambda_5$	0.030	0.004	0.986
Lack of Access to Credit	$\lambda_6$	0.040	0.006	0.992
Lack of Social Security Benefits	$\lambda_7$	0.068	0.010	0.999
Others	$\lambda_8$	0.042	0.006	1.000

In this analysis, we also observed that the first factor explain a substantial proportion of variance (0.844), followed by the second factor (0.081). The subsequent factors account for smaller proportions of variance, with diminishing contributions as we move towards the later factors.

Based on these results, we can interpret and justify the findings of the factor analysis as follows:

1. Factor 1: This factor, with the highest eigenvalue and the largest proportion of variance explained (0.844), is the most influential factor. It accounts for a significant portion of the overall variance in the observed variables. The variables loading heavily on this factor likely represent a core dimension or construct underlying street vendors' livelihoods in the Rawalpindi district during the COVID-19 pandemic.
2. Factors 2 to 8: These factors explain progressively smaller proportions of variance, suggesting that their contributions to understanding street vendors' livelihoods are relatively less substantial. However, they still capture additional dimensions or

constructs that contribute to the overall understanding of the phenomenon.

The justification for these results lies in the statistical properties of factor analysis and its ability to identify latent constructs and explain the variance in the observed variables. The eigenvalues and the proportions of variance explained indicate the significance and relevance of the identified factors in capturing the underlying dimensions influencing street vendors' livelihoods.

These results are consistent with previous studies that have employed factor analysis to understand the multidimensional nature of street vendors and the factors affecting vendors' economic resilience. The factors identified in this analysis can contribute to the existing body of knowledge by providing insights into the key dimensions that shape street vendors' livelihood outcomes during times of crisis. The factor analysis results lay the foundation for a comprehensive understanding of the underlying constructs and their implications for street vendors' livelihoods, contributing to evidence-based policy-making and targeted interventions to support this vulnerable group in the Rawalpindi district. Youth is found to be

actively engaged in informal economic activities, such as street vending. Similarly, the average education level of street vendors being around the primary level corresponds to previous findings that indicate limited access to formal education among this group.

### ORDINAL LOGISTIC REGRESSION ANALYSIS

The results of the ordinal logistic regression analysis provide valuable insights into the relationships between the independent variables and the dependent variable, shedding light on the factors that influence the impact of COVID-19 on street vendor livelihoods (Kumar, 2020) in the Rawalpindi district.

**Residence:** The positive coefficient suggests that residing in an urban area increases the odds of experiencing a specific level of the dependent variable compared to residing in a rural area. This finding is consistent with previous research that has highlighted the differential impact of urban and rural settings on street vendors' livelihoods. Urban areas often provide more economic opportunities but also present unique challenges, such as higher competition and stricter regulations.

**Years of Working:** The negative coefficient indicates that as the number of years of working increases, the odds of experiencing a specific level of the dependent variable decrease. This finding suggests that street vendors with more experience may have developed strategies and resilience mechanisms to mitigate the negative effects of the pandemic on their livelihoods. It aligns with previous studies that have emphasized the importance of experience and adaptability in responding to crises.

**Government Support Variables:** The positive coefficient indicates that the presence of government support programs or initiatives is associated with higher odds of experiencing a specific level of the dependent variable. This finding highlights the potential role of government interventions in mitigating the adverse effects of the pandemic on street vendors' livelihoods. Government support can provide financial assistance

The results of the ordinal logistic regression analysis are consistent with previous studies that have examined the factors affecting street vendors' livelihoods. The findings indicate that variables such as residence, years of working, and government support play important roles in shaping street vendors' economic resilience and livelihood outcomes during times of crisis.

The positive association between urban residence and better livelihood outcomes may be explained by the availability of a larger customer base, more diverse economic opportunities, and better access to support systems in urban areas. The negative association between years of working and livelihood outcomes suggests that longer working experience may lead to diminishing returns or increased vulnerability over time.

The positive association between government support variables and improved livelihood outcomes is consistent with the role of supportive policies and interventions in enhancing street vendors' economic resilience. Adequate government support can provide financial assistance, social protection, and access to resources that contribute to better livelihood outcomes for street vendors.

**Table 4: Ordinal Logistic Regression Analysis**

Independent Variable	Coefficient	Standard Error	Odds Ratio	95% CI Lower	95% CI Upper
Residence (Urban vs. Rural)	0.75	0.12	2.12	1.65	2.73
Years of Working	-0.34	0.08	0.71	0.58	0.87
Government Support	0.21	0.09	1.24	1.04	1.49

It is important to consider the limitations of the ordinal logistic regression analysis, such as the

potential presence of confounding variables and the assumption of proportional odds. Future

research should explore additional factors and employ more sophisticated statistical techniques to further investigate the complex dynamics of street vendors' livelihoods during the COVID-19 pandemic

### Conclusion

In conclusion, the study provides a comprehensive analysis of the socio-economic consequences of the COVID-19 pandemic on street vendors in the Rawalpindi district, Pakistan. The descriptive statistics shed light on the diverse nature of street vending, emphasizing the vulnerability of this population to the pandemic's disruptions. The Mann-Whitney U test, examining the impact of government support, suggests no significant difference between supported and unsupported street vendors, prompting considerations of the nuanced effects of intervention programs.

Factor analysis further unveils underlying constructs influencing street vendors' livelihoods during the pandemic, categorizing factors such as loss of income, inability to afford basic necessities, and health and safety concerns. The consistency of these factors with previous research contributes to a broader understanding of the multidimensional challenges faced by street vendors.

The application of ordinal logistic regression adds a quantitative dimension, revealing that urban residence, fewer years of working, and the presence of government support are associated with varied impacts on street vendors' livelihoods.

While the study contributes valuable insights, it acknowledges limitations and emphasizes the need for context-specific interpretations. The findings underscore the importance of tailored policy interventions, considering local nuances and demographic characteristics. Overall, the research offers a comprehensive perspective on the complex dynamics of street vendors' livelihoods in the Rawalpindi district during the COVID-19 pandemic, laying the groundwork for informed policymaking and future research endeavors.

### REFERENCES

- Abubakar, Y. A., Hamma-Adama, M., & Zakari, M. M. (2020). The impact of COVID-19 pandemic on the livelihood of street vendors in Nigeria. *European Journal of Social Sciences Studies*, 4(7), 174-182.
- Amelia, R., Indahwati, I., & Erfiani, E. (2022). The Ordinal Logistic Regression Model with Sampling Weights on Data from the National Socio-Economic Survey. *Barekeng: Jurnal Ilmu Matematika dan Terapan*, 16(4), 1355-1364.
- Banu, N., Sk, R., Mustaqim, M., Ali, M. K., Sarkar, R., & Mandal, S. (2023). Impact of COVID-19 pandemic on livelihoods of informal workers in Kolkata: from sustainable livelihood perspective. *GeoJournal*, 1-18.
- Béné, C., Bakker, D., Rodriguez, M. C., Even, B., Melo, J., & Sonneveld, A. (2021). *Impacts of COVID-19 on people's food security: Foundations for a more resilient food system*. Intl Food Policy Res Inst
- Bhattacharjee, S., & Pal, S. (2020). Street vendors and COVID-19 pandemic in India: A crisis beyond imagination. *Journal of Health Management*, 22(3), 386-396.
- Bhowmik, S., & Sarkar, D. (2020). COVID-19 pandemic and street vendors in India: A case study of Kolkata. *Journal of Urban Affairs*, euaa.12407.
- Chaudhuri, S. (2020). Impacts of COVID-19 on street vendors in India: A study of West Bengal. *Journal of Social and Economic Development*, 22(2), 281-292.
- Choudhury, S., & Dutta, A. (2021). The impact of COVID-19 on street vendors: A study on the urban poor in India. *Environment, Development and Sustainability*, 23(1), 105-128.
- Debnath, R., & Paul, S. K. (2020). Impact of COVID-19 pandemic on street vendors in India. *Journal of Public Affairs*, e2339.

- Kumar, K. (2020). Ordinal Regression to Analyze Positive Measures Adopted by the Public to Remain Optimistic during COVID-19 Lockdown-A Study. Available at SSRN 3673709.
- Kumari, M. (2018). *AN INTRODUCTION TO ECONOMETRICS*. India: Lulu
- Mishra, N., & Mishra, S. (2020). Impact of COVID-19 pandemic on street vendors in India: A case study of Bhubaneswar city. *Journal of Public Affairs*, e2318.
- Misra, S., & Sharma, S. (2020). Impact of COVID-19 pandemic on street vendors: A study of Delhi NCR. *Journal of Public Affairs*, e2317.
- Mohanty, S. K., & Panda, S. (2020). Street vendors and COVID-19 pandemic in India: A study on the livelihood crisis. *Journal of Public Affairs*, e2344.
- Person, Kayla, "A Descriptive Analysis of Demographic Characteristics and Their Influence on Student Attendance at Programming Board Events" (2011). *Educational Administration: Theses, Dissertations, and Student Research*. 69
- Riaz, S., Ahmed, R., Parkash, R., & Ahmad, M. J. (2020). Determinants of stock market investors' behavior in COVID-19: A study on the Pakistan Stock Exchange.
- Romero-Michel, J. C., Mokay-Ramírez, K. A., Delgado-Machuca, M., Delgado-Enciso, J., Aurelien-Cabezas, N. S., Tiburcio-Jimenez, D., ... & Delgado-Enciso, I. (2021). Health and economic measures in response to the COVID-19 pandemic-Effect on street vendors. *The Journal of Infection in Developing Countries*, 15(02), 198-203.
- Sahu, S. (2020). Impact of COVID-19 pandemic on street vendors in Bhubaneswar: An empirical study. *International Journal of Management Studies and Social Science Research*, 3(6), 66-76.
- Sharma, N., & Kumari, A. (2020). Impact of COVID-19 pandemic on street vendors in Delhi. *International Journal of Business Quantitative Economics and Applied Management Research*, 6(10), 29-44.
- Shrestha, N. K., & Thapa, R. (2020). COVID-19 and street vendors: A case of Kathmandu Valley, Nepal. *Journal of Health and Allied Sciences*, 10(2), 1-10.
- Singh, R., & Rana, J. (2020). Impact of COVID-19 pandemic on street vendors in India. *International Journal of Management, Technology and Engineering*, 10(6), 3636-3647.
- Van Meerkerk, I., Edelenbos, J. & Klijn, E.H. (2020). Survey Approach. In: Voets, J., Keast, R. & Koliba, C. (Eds.). *Networks and Collaboration in the Public Sector. Essential Research Approaches, Methodologies and Analytical Tools*. Pp. 64-81. New York: Routledge
- Yasin, M. A., & Abbas, J. (2020). COVID-19 pandemic and street vendors in Pakistan: An assessment of challenges and coping strategies. *Journal of Public Affairs*, e2348.
- Zaidi, S., & Siddiqui, T. A. (2020). COVID-19 and street vendors: Challenges and opportunities for sustainable livelihoods in India. *Sustainability*, 12(22), 9345.